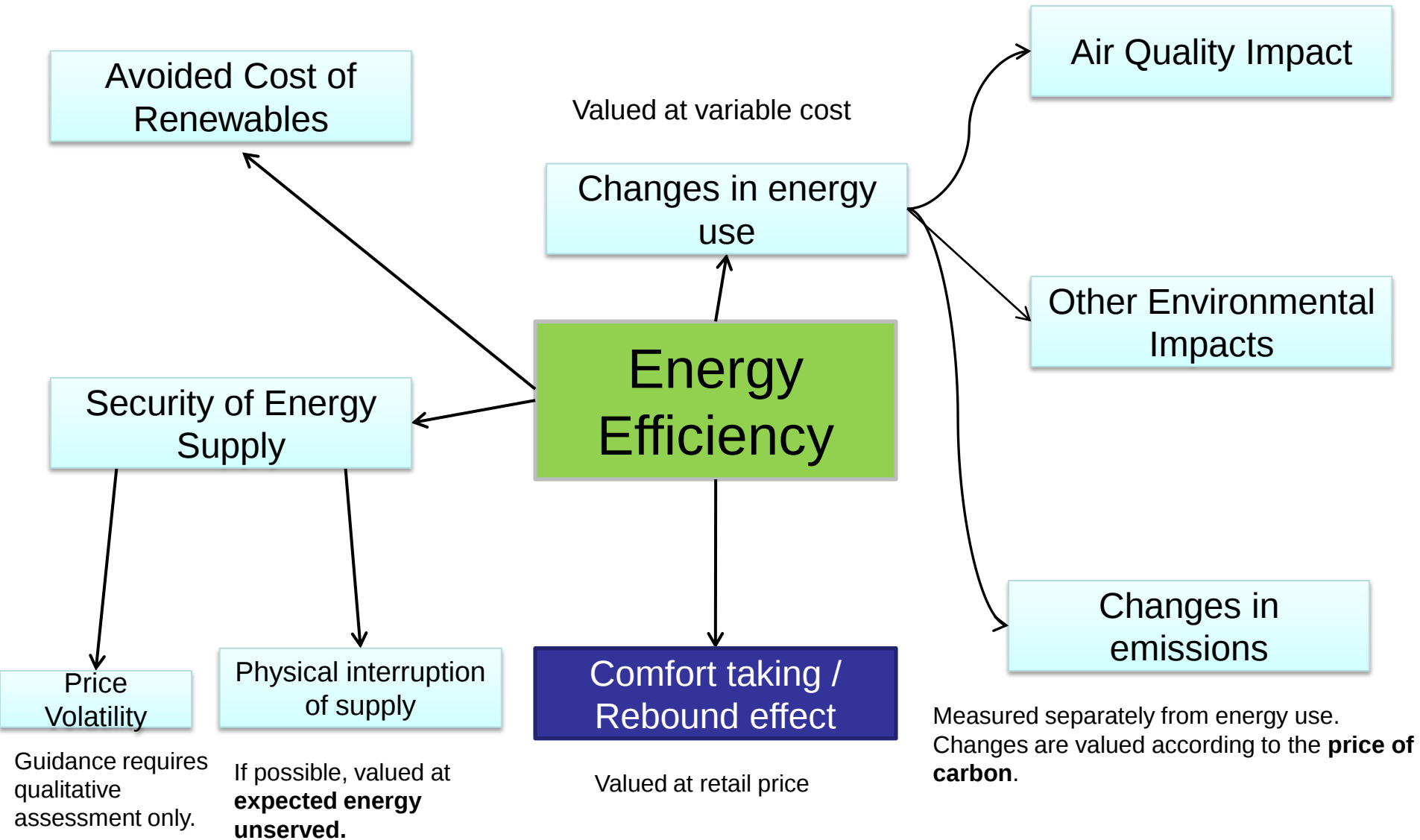


Multiple benefits of energy efficiency: the UK perspective

Sarah Meagher
Energy Efficiency Deployment Office
14 March 2012

- **Policy assessment framework**
- Focus on fuel poverty
- Evaluating benefits

Framework for valuation of energy efficiency measures



Source: Valuation of energy use and greenhouse gas emissions for appraisal and valuation" (DECC, 2011)

Example: Consultation Stage Green Deal Impact Assessment



Benefits (£m)	Energy savings (Variable element)	£16,841
	Comfort benefits	£3,760
	Air quality benefits	£1,313
	Lifetime non-traded carbon savings	£5,377
	Lifetime EU Allowance savings	£1,917
	Total benefits (£m)	£29,209
Carbon & Energy savings	2020 Non-traded carbon savings (MtCO ₂ pa)	2.11
	- Domestic GD and CT measures	2.49
	- Domestic AW measures	-1.28
	- Non domestic sector	0.90
	2020 Traded carbon savings (MtCO ₂ pa)	3.77
	2020 Energy savings (TWh)	21.22
	Life time non-traded carbon savings (MtCO ₂)	114
	Life time traded carbon savings (MtCO ₂)	53
	Average cost effectiveness £/non-traded tCO ₂	-£29

Non-monetised benefits

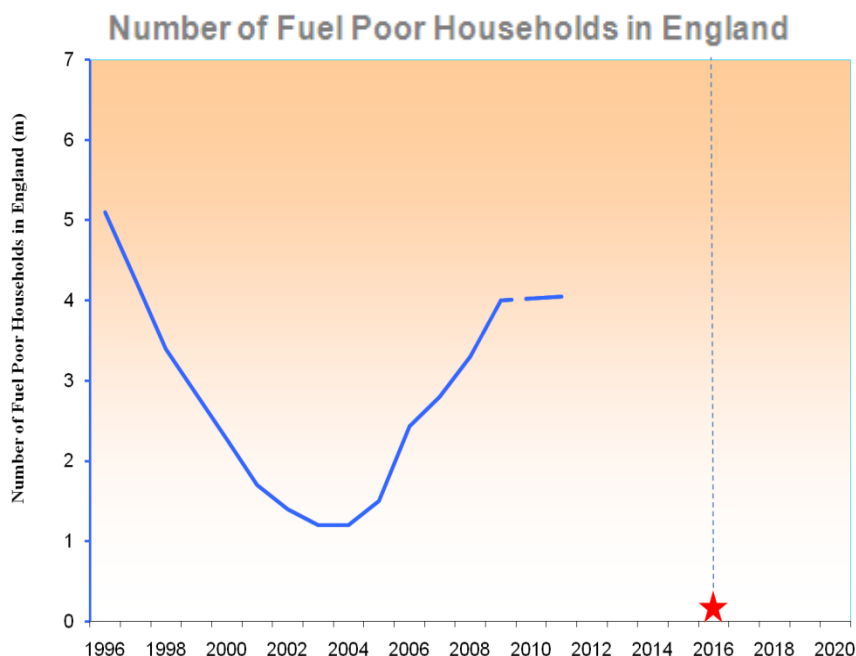
- Estimate that ECO worth £1.3bn per, by the end of 2022 reduction in the number of households in fuel poverty of between 350,000 and 550,000, compared to how many households could have been in fuel poverty at the end of 2022
- The health benefits arising from warmer homes have not been monetised

Not finalised: will be updated later in 2012

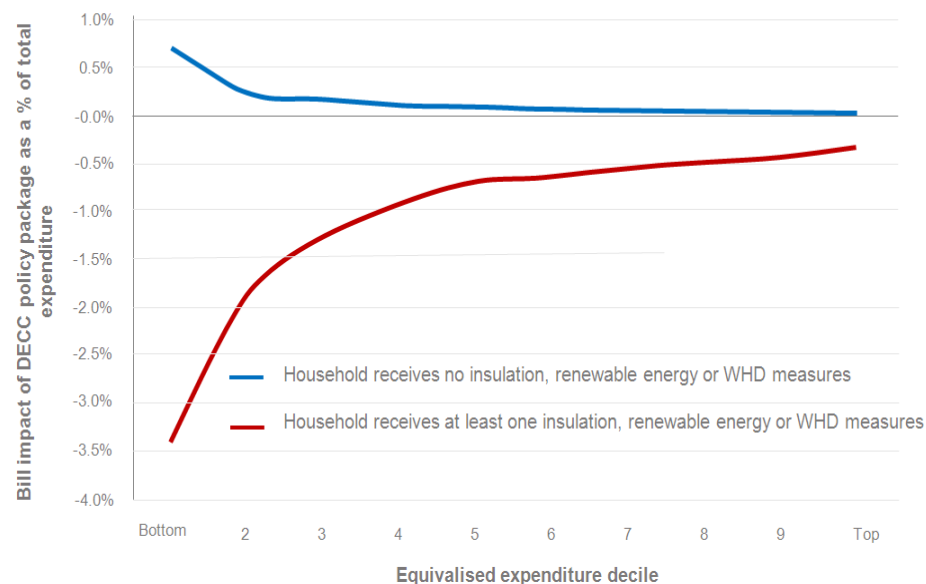
- Policy assessment framework
- **Focus on fuel poverty**
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Fuel Poverty

- A household is in fuel poverty if it would *need* to spend at least 10% of its income in order to heat the home to an adequate level of warmth (21°C for the main living area, and 18°C for other occupied rooms).

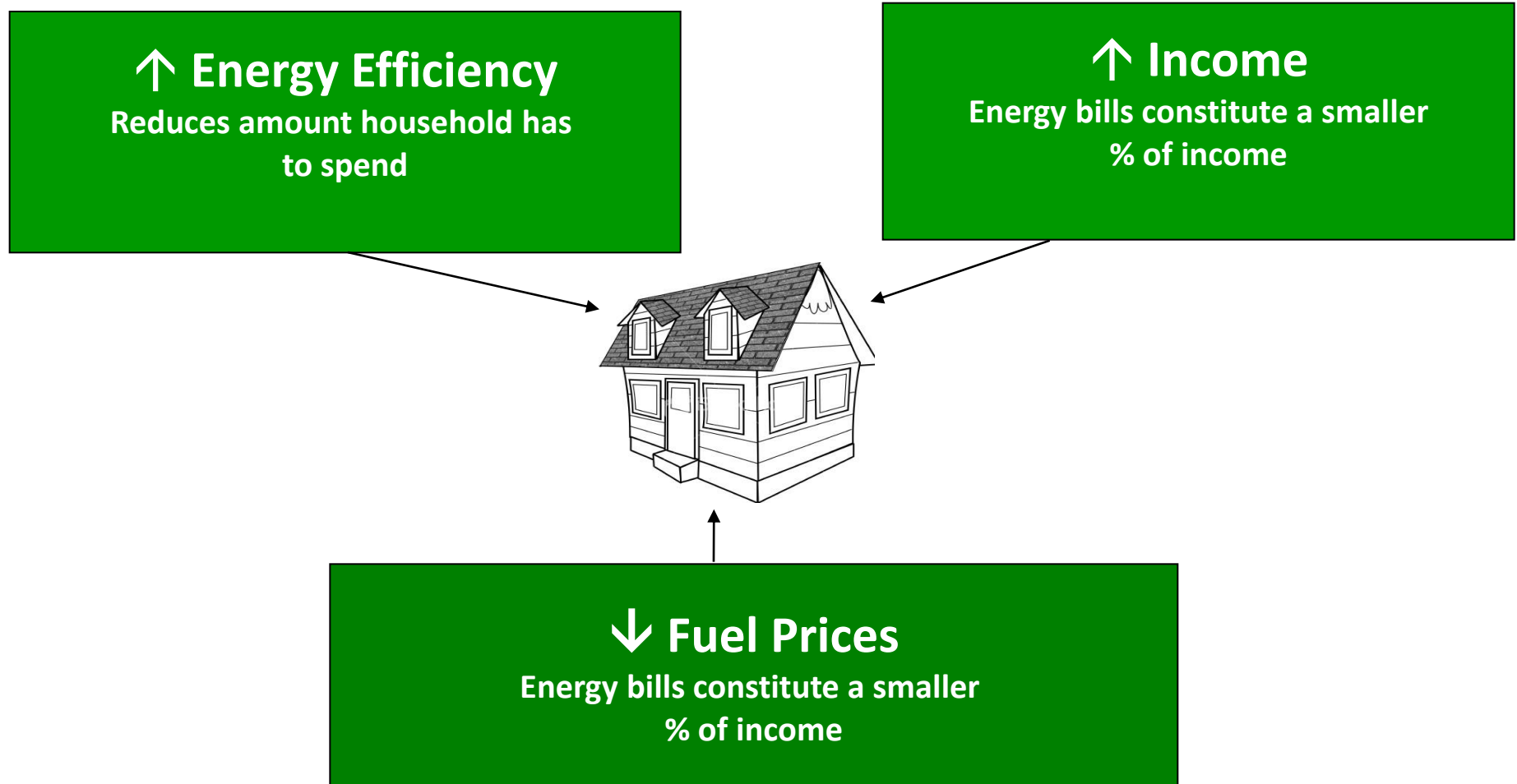


Impact of the DECC policy package in 2020 on energy bills for households at different points of the income distribution



The Government commissioned Professor Hills to undertake a **review of the fuel poverty target and definition**. This will be made public shortly.

What are the variables of fuel poverty?



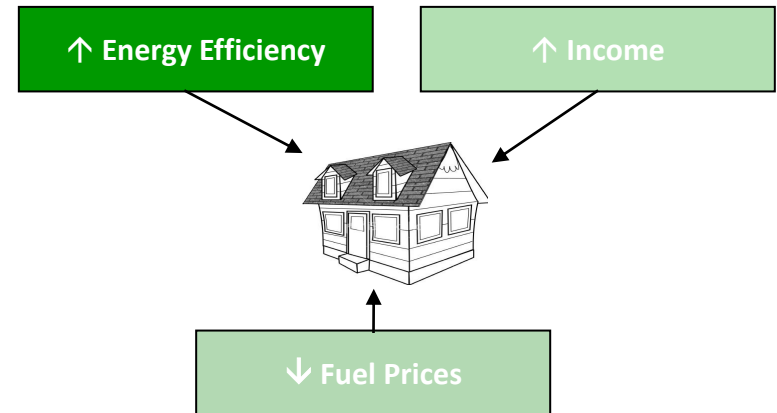
Current DECC Policies: Energy Efficiency

WARM FRONT

- Mostly provides heating measures to fuel poor households.
- Exchequer funded
- Assisted over 2.3m vulnerable households since 2000
- Due to close March 2013

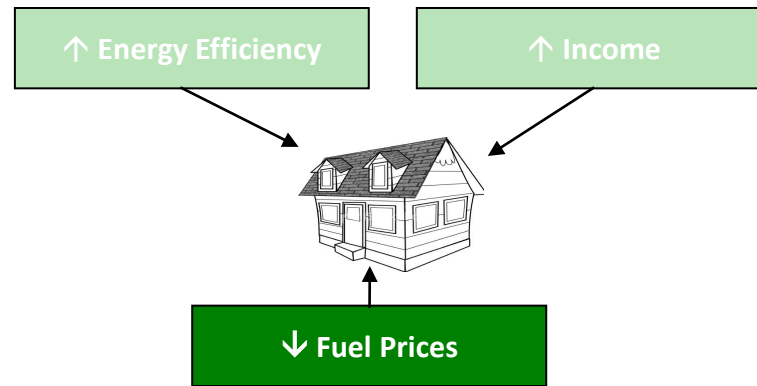
CARBON EMISSIONS REDUCTION TARGET (CERT) SUPER PRIORITY GROUP (SPG)

- Mostly provides insulation to households at risk of fuel poverty
- Energy Supplier funded
- Estimated spend of £200m pa, due to close end 2012.



- Green Deal Eco due to launch 2012/13. Affordable Warmth obligation to assist low income households.

Current DECC Policies: Energy Bills



Warm Home Discount

- Mostly provides discounts on energy bills for fuel poor households
- Most recipients receive discounts on their electricity bills. Discounts are £120 this year, rising to £140 in 2014/15
- Energy Supplier funded
- Worth up to £1.1bn across CSR period (April 2011 to March 2015)
- Assists around 2m vulnerable households per year

Fuel Poverty Health Impacts



- Fuel Poverty is linked to a broad range of *physical* and *mental* health impacts.

Physical Health Impacts

- There is strong evidence relating to specific health impacts e.g. Cardiovascular and respiratory problems below certain temperatures, especially for the elderly

Excess Winter Deaths

- Hills review suggested that around 2,700 EWD may be caused by fuel poverty

Mental Health Impacts

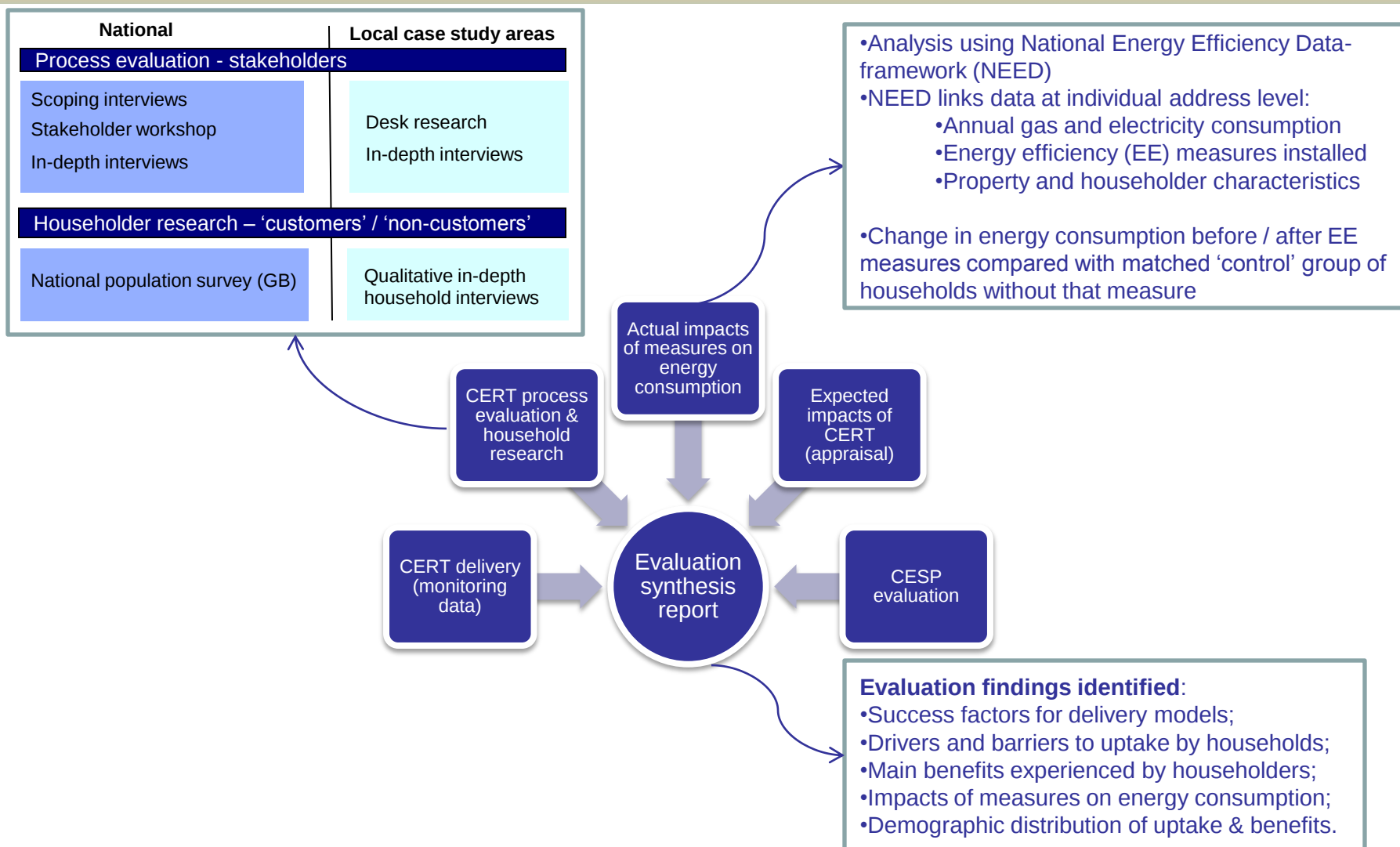
- Warm Front customers 2.5 times more likely to report moderate or high stress levels than those reporting no difficulty to pay
- CMD households less likely to reach a desired level of heating

- Policy assessment framework
- Focus on fuel poverty
- **Evaluating benefits**

DECC Approach to Ex Post Evaluation

- DECC Evaluation Board provides strategic leadership, challenge and prioritisation of policies / programmes
- Evaluations are:
 - Considered for all policies / programmes, with monitoring of inputs, outputs and delivery process as minimum
 - Undertaken and owned by programmes, with support and QA from central Evaluation Team
 - Planned early, alongside monitoring, as part of policy / programme design & delivery
- Consistent approach to evaluation planning
 - 1. Develop policy logic model (Theory of Change)
 - 2. Identify evaluation use and questions
 - 3. Select evaluation approach
 - 4. Define monitoring and other data requirements, resources , timing etc.
- Approaches vary, but impact evaluations should consider broad range of impacts and always use appropriate comparator / control group to assess counterfactual
- Meta-evaluations of DECC policies to be undertaken (yearly), to assess relative and aggregate impacts of policies, where possible

Evaluation example: Carbon Emissions Reduction Target (CERT) and Community Energy Saving Programme (CESP)



Carbon Emissions Reduction Target (CERT) and Community Energy Saving Programme (CESP) identified benefits



- Energy savings
 - CERT: Between April 2008 and March 2011
 - 2 million lofts professionally insulated
 - 1.6 million households received cavity wall insulation
 - 1.4 million households bought subsidised DIY loft insulation
 - Measured energy savings around 10% for cavity wall insulation
- Comfort taking
- Easier to heat home and reduced energy bills.
- Perception that energy bills were now affordable
- Economic benefits: Stimulated development of energy efficiency industry
 - Employment
 - Innovation and cost savings
- Aesthetic improvements from wider renovations
- Social benefits